

**CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
STATEMENT OF INVESTMENT POLICY**

**FOR THE
INFLATION-LINKED ASSET CLASS**

February 19, 2008

This Policy is effective upon adoption and supersedes all previous policies on inflation-linked assets, commodities, inflation-linked bonds, infrastructure, and forestland (timber).

I. PURPOSE

The CalPERS Total Fund Statement of Investment Policy, adopted by the CalPERS Investment Committee ("Committee"), sets forth CalPERS' overarching investment purposes and objectives with respect to all its investment programs.

This document sets forth the investment policy ("Policy") for the Inflation Linked Asset Class ("IL Asset Class" or "Program"). The design of this Policy ensures that investors, managers, consultants, and other participants selected by the California Public Employees' Retirement System ("CalPERS") take prudent and careful action while managing the Program. Additionally, use of this Policy assures sufficient flexibility in managing investment risks and returns associated with this Program.

The Program includes four components: commodities, inflation-linked bonds, infrastructure, and forestland. The Policy includes investment guidelines for the Program structure followed by an attachment for each component.

II. STRATEGIC OBJECTIVE

The Program shall be managed to accomplish the following:

- A. Prudently achieve long-term returns above inflation;
- B. Diversify CalPERS investments; and
- C. Hedge against inflation [risks](#).

III. RESPONSIBILITIES

- A. CalPERS' Investment Staff ("Staff") is responsible for the following:

1. All aspects of portfolio management including monitoring, analyzing, and evaluating performance relative to the appropriate benchmark.
2. Reporting to the Committee quarterly or more frequently if needed about the performance of the Program.
3. Monitoring the implementation of, and compliance with, the Policy. Staff shall report material concerns and all Policy violations in a timely manner and in writing to the Committee. These reports shall include explanations of the violations and appropriate recommendations for corrective action.

The Asset Allocation unit will be responsible for the Program, though it may delegate investment management of Program assets to either [external managers](#) or other internal units.

- B. The [General Consultant](#) ("Consultant") is responsible for:

Monitoring, evaluating, and reporting periodically to the Committee, on the performance of the Program relative to the benchmark and Policy.

- C. For those programs that are managed by an External Manager ("Manager"), the Manager is responsible for all aspects of portfolio management as set forth in each Manager's contract with CalPERS and shall, at a minimum, fulfill the following duties:

1. Communicate with Staff as needed regarding investment strategy and investment results.
2. Monitor, analyze, and evaluate performance relative to the agreed upon benchmark.
3. Cooperate fully with CalPERS' Staff, [Custodian](#), and consultant assigned to the Program concerning requests for information.

IV. PERFORMANCE OBJECTIVE AND BENCHMARK

- A. Benchmarks for the Program and for each of the four components are listed in Table 1 below:

Table 1. Program Benchmarks

<u>Component</u>	<u>Benchmark Index</u>
Commodities	GSCI-TR
Inflation-linked bonds	ILB Custom Index
Infrastructure	CPI + 5%
Forestland	CPI + 5%
Program (IL Asset Class)	CPI + 4%

GSCI-TR = S&P GSCI Total Return Index.
 ILB Custom Index = 67% Lehman Total U.S. TIPS Index + 33% Custom Lehman Global Inflation Linked Bond Index ex TIPS, unhedged.
 CPI = Prior month trailing 12-month U.S. Consumer Price Index, all urban consumers, not seasonally adjusted.

- B. The performance objective is to outperform the Program benchmark, net of all fees, over rolling five-year periods.

V. INVESTMENT APPROACHES AND PARAMETERS

A. IL Asset Class Program Allocations

Program allocation targets and ranges are listed in Table 2 below. Allocations are expressed as a percentage of the market value of the CalPERS fund.

Table 2: Program Allocations

<u>Component</u>	<u>Target*</u>	<u>Range*</u>
Commodities	1.5%	0.50% - 3.00%
Inflation-linked bonds	1.0%	0.50% - 3.00%
Infrastructure	1.5%	0.00% – 3.00%
Forestland	<u>1.0%</u>	<u>0.00% – 2.00%</u>
IL Asset Class	5.0%	0.00% - 5.00%

* percentage of the CalPERS Fund.

The allocation ranges in Table 2 will apply when the market value of Program assets equals or exceeds two percent of the CalPERS fund.

B. Prohibited Investments

Ineligible investments include the following:

1. Tobacco companies; and
2. Any investment prohibited by CalPERS' Insider Trading Policy or Restricted Company list.
3. Any other Committee-approved restriction

VI. CALCULATIONS AND COMPUTATIONS

Investors, managers, consultants, and other participants selected by CalPERS shall make all calculations and computations on a market value basis as recorded by CalPERS' Custodian.

VII. GLOSSARY OF TERMS

Key words used in this policy are defined in CalPERS' Master Glossary of Terms.

Approved by the Policy Subcommittee: December 14, 2007

Adopted by the Investment Committee: February 19, 2008

COMMODITIES PROGRAM

February 19, 2008

I. PURPOSE

This attachment to the Inflation-Linked Asset Class Policy sets forth the investment policy ("Commodities Policy") for the CalPERS commodities investments ("Commodities Program"). The Commodities Program includes [overlay](#) exposures and [collateral](#) investments.

II. STRATEGIC OBJECTIVE

The Program shall be managed to accomplish the following:

- A. Enhance CalPERS' risk-adjusted returns;
- B. Diversify CalPERS' investments; and
- C. Hedge against inflation risks.

III. RESPONSIBILITIES

Responsibilities are described in the Inflation-Linked Asset Class policy, Section III.

IV. PERFORMANCE OBJECTIVE AND BENCHMARK

- A. The Commodities Program benchmark is the [S&P GSCI Total Return Index](#) ("S&P GSCI TR Index").
- B. The performance objective is to outperform the benchmark, net of all fees.

V. INVESTMENT APPROACHES AND PARAMETERS

A. Permitted Investment Instruments

The following classes of Commodities Program overlay instruments are permitted:

- 1. [Futures](#) contracts;
- 2. Forward contracts;
- 3. [Swaps](#);

4. [Structured notes](#); and
5. [Options](#).

Individual positions may be long or short the [commodity](#) risk exposure.

Direct investments in physical commodities are not permitted.

[Derivative](#) Instruments may be standardized and exchange traded (e.g., futures), or privately negotiated and over-the-counter ([OTC](#)), e.g., swaps.

B. Instrument Risk Exposure

The risk exposure of the investment instruments may be long or short, or a combination of both.

The underlying risk exposure may be to a [cash commodity](#) or a commodity derivative.

Instruments incorporating multiple commodity risk exposures, such as commodity baskets and commodity indices, are allowed.

The risk exposure for exchange traded instruments is with the exchange's clearinghouse, and with the approved [counterparty](#) for OTC transactions.

C. Listing Requirements

Exchange traded commodity futures, options and any related instruments may be traded on any exchange regulated by the [CFTC](#) (Commodities Futures Trading Commission) or the [FSA](#) (Financial Services Authority) of the United Kingdom, or on any exchange that lists a commodity future included in the Commodities Program benchmark.

D. Counterparty Requirements

1. Counterparty creditworthiness, for non-exchange traded derivatives, shall be at a minimum of "A3" as defined by Moody's Investor Service, "A-" by Standard & Poor's and "A-" by Fitch. The use of counterparties holding a split rating with one of the ratings below A3/A- is prohibited. The use of unrated counterparties is prohibited unless the counterparty is a wholly owned affiliate of a parent company that unconditionally guarantees payment and meets the above credit standards.

2. Individual counterparty exposure, for non-exchange traded commodity derivatives, is limited to the 40% of the net notional option-adjusted exposure of the Commodities Program at the inception of a new position. An exception is allowed if the total non-exchange traded commodity derivatives exposure is less than \$1 billion.
3. Swaps shall be settled monthly.
4. Any entity acting as counterparty shall be regulated in either the United States or the United Kingdom.

E. Other Risk Management

1. **Liquidity risk** shall be managed by adhering to the above counterparty requirements.
2. **Legal risk** will be minimized by engaging in over-the-counter (OTC) derivative transactions only where such transactions are enforceable under the laws of the governing jurisdiction and will be governed by an International Swaps and Derivatives Association, Inc. ([ISDA](#)) agreement where applicable.
3. **Pricing risk** will be minimized by using standardized or market accepted instruments for OTC derivatives. Exchange-traded derivatives will be used when appropriate to minimize pricing risk.
4. **Sector risk** will be mitigated by maintaining net option-adjusted commodities exposures within plus and minus twenty percentage points of benchmark weights for the following commodity overlay sectors: energy, metals, and “soft” commodities (currently food and other agricultural products). The benchmark commodity index provider will be the source in determining the sector of individual commodities. Each of these three sectors shall have a positive net option-adjusted commodities exposure.

F. Commodity Collateral

1. Collateral Market Value

The market value of the commodities collateral shall be maintained at 100% or greater of the net option-adjusted notional value of the commodities overlay exposure at the time of any new commodities overlay position. The intent of this constraint is to avoid incurring economic [leverage](#) (commodities value exceeding the value of the collateral) due to investing in commodities, while recognizing that

the amount of collateral relative to the amount of commodities exposure may drift from time to time due to a variety of possible factors, which may cause the collateral value to drop below the value of commodities. If the collateral market value falls below the net option adjusted value of the overlay, portfolio adjustments will be made at the earliest opportunity to bring the collateral value up to the notional value of the overlay.

2. Permitted Investments

The following classes of Commodities Program collateral investments are permitted.

- a. Units of an internal short term investment fund ("STIF");
- b. Inflation linked bond investments held in the IL Asset Class (subject to no more than 20% of the Commodities Program);
- c. Cash or treasury debt obligations used for futures margin requirements; and
- d. Any receivable due from an approved counterparty to a commodity-related investment.

Approved by the Policy Subcommittee: December 15, 2006

Adopted by the Investment Committee: December 18, 2006

Revised by the Policy Subcommittee: December 14, 2007

Approved by the Investment Committee: February 19, 2008

INFLATION-LINKED BOND PROGRAM

February 19, 2008

I. PURPOSE

This attachment to the Inflation-Linked Asset Class Policy sets forth the investment policy ("Policy") for Inflation-Linked Bond investments (ILB Program).

II. STRATEGIC OBJECTIVE

The Program shall be managed to accomplish the following:

- A. Enhance CalPERS' risk adjusted returns;
- B. Diversify CalPERS' investments; and,
- C. Hedge against inflation risks.

III. RESPONSIBILITIES

Responsibilities are described in the Inflation-Linked Asset Class policy, section III.

IV. PERFORMANCE OBJECTIVE AND BENCHMARK

- A. The ILB Program [benchmark](#) is a blend of 67% Lehman Treasury Inflation-Protected Index (TIPS) and 33% Lehman Custom International Inflation-Linked Bond Index ex TIPS, unhedged.
- B. The performance objective is to outperform the benchmark, net of all fees.

V. INVESTMENT APPROACHES AND PARAMETERS

In consideration of the initial phase-in period needed to implement a new ILB Program and the difficulty of achieving cost-effective diversification for small portfolios, the permitted ranges in subsections A, C, D, and E4 of Policy section V apply when the market value of the ILB Program exceeds \$1 billion. The other Policy language applies at all times.

A. Permitted Investments and Ranges

ILB Program targets and permissible ranges as a percentage of total portfolio are listed below:

Sector	Policy target	Permitted range
Total investment grade inflation-linked government bonds	100%	80-100%
U.S. inflation linked bonds	67%	47-87%
Investment grade international inflation-linked bonds	33%	13-53%
Non-government investment grade inflation-linked bonds	0%	0-10%
Investment grade nominal government bonds	0%	0-10%
Short-term fixed income	0%	0-10%
Non-investment grade inflation-linked government bonds	0%	0-5%

The market value of nonindex investments, defined as the sum of the last four rows of the above table, shall not exceed 20% of the ILB Program.

[Derivatives](#) with risk and return characteristics substantially similar to bonds or bond indices included in the Program benchmark are permitted. Any use of derivatives shall be in compliance with the CalPERS Derivatives Investment Policy as stated in Section IX of the CalPERS Dollar-Denominated Fixed Income Program Policy.

B. Interest Rate Risk

Interest Rate Risk is the price volatility produced by changes in the overall level of interest rates as measured by option-adjusted [duration](#). Duration shall be maintained at \pm one year of the benchmark duration.

C. Sovereign Ranges

The non-U.S. segment of the ILB benchmark is a custom benchmark of ILBs issued by selected countries in the Lehman Global Inflation Linked Index based on size and liquidity criteria. The selected countries and weights as of September 30, 2007 are listed in the table below and may be revised based upon periodic review.

Issuer	Benchmark Issuer Weight*	Range
United Kingdom	15%	5-25%
France	10%	0-20%
Italy	5%	0-15%
Japan	3%	0-13%
Germany	1%	0-11%

* Benchmark issuer weights as of September 2007. Total may not sum to 100% due to rounding.

The minimum portfolio allocation to each non-U.S. country shall be the greater of either zero or ten percentage points less than the benchmark weight. The maximum ILB investment by country shall be ten percentage points greater than the benchmark weight. The resulting permissible allocation ranges by country as of September 30, 2007 are listed in the right column of the above table.

D. Currency Risk

Currency Risk is the risk of having different weights in currency than the index. The permissible currency ranges shall be consistent with the sovereign ranges (Section V.C.) of $\pm 10\%$ of the benchmark weights. The table below lists the currency ranges as of September 30, 2007. Note, since Italy, France and Germany use the Euro as a currency, the upper end ranges for each country have been combined to equal 45% top end range for Euro exposure (France, Italy and Germany's top range is 20%, 15% and 11% respectively).

Currency Allowable Ranges

Currency	Benchmark Weight*	Range
Euro	15%	0-46%
UK Sterling	15%	5-25%
Japanese Yen	3%	0-13%

*Benchmark weights are as of September 2007.

E. Restrictions and Prohibitions

1. Except for government issuers, investments in a single issuer shall not exceed 2% of the Inflation-Linked Bond Portfolio during the holding period for such investment. For [High Quality LIBOR](#) and [STIF](#), no single issuer limit exists.
2. Non-investment grade securities are not to exceed 5% of the total portfolio.

3. Portfolio [leverage](#) is not permitted at any time.
4. Sections V.A and V.C of this attachment specify sector and issuer ranges.
5. All non-US securities must be compliant with the [Foreign Debt Policy](#) which specifies minimum credit ratings. The Foreign Debt Policy is included as Attachment B1

Approved by the Policy Subcommittee: December 14, 2007

Adopted by the Investment Committee: February 19, 2008

Attachment B1

Local-Currency Debt of National Governments and All Debt of Corporations and Subnational Governments (i.e. Provincial, State and Municipal)

1. Both the issuer and issuer's national government (if the issuer is not the national government itself) must be rated investment grade, at least BBB- by [S&P](#) or [Fitch](#), or Baa3 by [Moody's](#). Even in the case of local-currency debt, this requirement must be satisfied by long-term foreign currency ratings instead of local-currency ratings, which are generally higher because a country can easily print more of its own currency to meet its local debt obligations. This unconventional, very conservative application of the rating requirement will give extra protection against the special foreign-exchange valuation and retrieval risks of local currency.
2. The country must be part of the Lehman Global Aggregate Index, a widely followed index which includes only those local markets that are fairly liquid and fairly well developed.
3. The country's currency must be fully convertible in the spot market for foreign investors, so that Managers may retrieve CalPERS' funds without limit or obstruction.

Global Debt Issued by National Governments

The policy stipulation for global debt issued in major markets differ somewhat for holdings denominated in major non-dollar currencies and for holdings denominated in the dollar. The difference is found on the approach to limiting portfolio concentration in emerging markets, while minimum credit rating requirements are the same for both. The stipulation is as follows:

For externally managed portfolios, global bonds issued by national governments must have a credit rating of BB- or higher from S&P or Fitch and Ba3 or higher from Moody's.

INFRASTRUCTURE PROGRAM

August 18, 2008

This Policy is effective upon adoption.

I. PURPOSE

This attachment to the Inflation-Linked Asset Policy sets forth the investment policy ("Policy") for the Infrastructure Program ("Program").

II. STRATEGIC OBJECTIVE

The Program shall be managed, consistent with CalPERS' fiduciary responsibility as set forth in the CalPERS Total Fund statement of policy, to accomplish the following:

- A. Preserve investment capital;
- B. Generate attractive risk-adjusted rates of return for CalPERS as a total return investor, including the following components:
 - 1. Provide, at a minimum, moderate cash flow from operations with the generation of cash flow secondary to producing long term total returns; and,
 - 2. Provide appreciation potential as a result of employing operational improvements and active best management techniques and practices.
- C. [Hedge](#) against inflation;
- D. Hedge against long-term liabilities;
- E. Diversify CalPERS' investments;
- F. Establish CalPERS' reputation as a premier infrastructure investment manager and investor of choice within the investment community;
- G. Act as a responsible steward of Program investments through efficient operation of assets, delivery of quality services, utilization of responsible labor and management practices and implementation of responsible environmental practices: and,

- H. Foster renewal and expansion of infrastructure assets.

III. RESPONSIBILITIES

Responsibilities are described in the Inflation-Linked Asset Class policy, Section III.

IV. PERFORMANCE OBJECTIVE AND BENCHMARK

The Program shall be managed to achieve the following long-term objectives:

- A. Exceed a minimum target rate of return equal to a premium of 5% over the inflation rate measured by the United States Bureau of Labor Statistics Consumer Price Index for all Urban Consumers ("CPI"), net of fees over rolling five years; and,
- B. Achieve real rates of return from individual assets held in the Program that exceed a target rate that is adjusted for risk depending on the nature of the investment including [leverage](#) and the country and region in which it is located with the overall target stated in paragraph A above as the benchmark.

V. ASSET ALLOCATION

The Program asset allocation will comply with the Inflation-Linked Asset Class Policy. The Program allocation range does not include any leverage amounts associated with the investments.

VI. INVESTMENT APPROACHES AND PARAMETERS

A. General Approach

The Program shall seek to invest in opportunities within public and private infrastructure including but not limited to transportation, energy, natural resources, utilities, water, communications and certain social infrastructure projects that meet the Program objectives. Staff shall review and manage investments in a disciplined and [opportunistic](#) manner. Staff shall manage the Program as a whole with specific criteria appropriate to listed securities, partnership and [direct investments](#).

Strategic assessments shall identify portfolio weightings and identify the most attractive segments of the market available for investing. Based on these assessments, Staff shall proactively seek out the most attractive investment opportunities, while maintaining appropriate diversification.

B. Infrastructure Program Strategy

The intent of the infrastructure program is to provide consistent, non-volatile and long term returns of CPI plus 5% while incurring modest risk. The intent of the program is not to participate in high risk and highly-leveraged transactions with excessive external manager fee structures. However, it is recognized that leverage is a financing mechanism that is utilized with most infrastructure investments and can be prudently and appropriately deployed. External manager fees for the infrastructure program will be commensurate with the risk and return profile of the infrastructure program.

The Program Strategy shall be revised periodically as appropriate and updated as necessary.

1. Portfolio Allocation and Leverage

Sector	Strategy	Characteristics	Portfolio Allocation	Expected Real Return (CPI+)
Private	Core	<ul style="list-style-type: none"> o Mature, operating assets with steady cash flows from operations o Low risk and typically low growth o Perpetual or long-term monopoly positions o Typically “buy and hold” assets o Cash yield is the dominant part of total return. 	10% - 40%	3% - 5%
	Value Added	<ul style="list-style-type: none"> o Less mature, operating assets in a growth phase o Higher return potential and higher risk in the execution of the growth strategies o May involve an expansion of capacity o May involve a “buy and build” strategy o Cash yield and net capital appreciation are more or less equal. 	40% - 70%	5% - 7%
	Opportunistic	<ul style="list-style-type: none"> o Can consist of greenfield construction and development o High risk and high return potential o May involve a roll up of small infrastructure businesses to create a regional or national platform 	0% - 20%	8% - 12%

		<ul style="list-style-type: none"> o Capital appreciation forms the dominant part of total return. 		
Public	Listed	<ul style="list-style-type: none"> o Mature, operating assets with steady cash flows from operations o Medium risk and modest growth o Traded equities of infrastructure assets o Liquidity and market beta o Cash yield and capital appreciation are more or less equal. 	0% -10%	4% - 6%
		Total	100%	> 5%

The average leverage level for the infrastructure portfolio shall not exceed 65%. Individual investments may exceed the average leverage guideline depending upon the rating of the debt, [debt service coverage](#) and the general characteristics of the investments. Investments exceeding 50% leverage shall be presented to the Committee for review and approval. As more investments are made in the portfolio and investments are made in different geographies, subsectors and with various investment managers, leverage levels will subsequently decrease below the stated average leverage level. Staff will report the average level of leverage in the program to the Committee on a quarterly basis.

2. Investment Type Risk Matrix

The table below classifies investment types by risk for the purposes of investment selection and portfolio construction. The program will primarily target investments in the low and medium risk categories. Investments in the higher risk category will be considered to be part of the opportunistic segment and will not exceed 20% of program.

Risk Matrix			
Risk	Low Risk	Medium Risk	High Risk
Project Example	Seasoned toll roads, bridges, and tunnels.	Airports, seaports	New build of toll roads, bridges, tunnels, airports
	Regulated water/wastewater	Unregulated water/wastewater	Greenfield project development
	Social infrastructure (hospitals, schools, prisons)	Industrial water/wastewater	Communications (broadcast, satellite, cable)
	Regulated electric and gas	Contracted independent power generation	Merchant power plants
		Gas pipelines and storage (including LNG)	
		Rail	
		Other commercial/industrial infrastructure	
		Listed	

Power projects with significant commodity risks will be excluded unless such risks are mitigated or hedged. Merchant power projects which assume a spot price risk for power will be excluded.

3. Regional Allocation

Region	Allocation	Example
USA	40% -70%	
OECD Countries (ex-USA)	20% - 40%	Canada, Mexico, UK, Australia, Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Korea, Luxembourg, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Spain, Sweden, Switzerland, Turkey
Regions, non-USA, non-OECD	0% - 20%	Asia, Caribbean, Latin America, Central Europe, Middle East, North Africa

Staff will be guided by the CalPERS' Emerging Market Principles in the case of direct investments in such countries and will report any investments on an annual basis. In the case of funds or partnership

investments where CalPERS is a minority investor staff will report any emerging market investments relative to CalPERS Emerging Market Principles on an annual basis to the Committee.

4. Concentration Limits

Concentration Limits	
Any single investment in a partnership or fund	No more than 25% of committed capital
Aggregate CalPERS' commitment to a single general partner, fund or separate account	No more than 30% of CalPERS' Infrastructure Program allocation
Any single direct investment	No more than 10% of CalPERS' Infrastructure Program allocation
Equity investments	70% - 100%
Debt investments	0% - 30%

C. Domestic Public Private Partnerships

It is the intent of this policy that in evaluating those domestic Public Private Partnerships ("PPPs") in which CalPERS may invest, that Staff, and where appropriate, the Committee will consider the extent to which the sponsoring public entity and the investor(s) share in the benefits and risks associated with the PPP.

Infrastructure assets, by definition, support services that benefit society as a whole and are intended to serve a long and useful life. Recruiting and training a high quality workforce associated with these assets may lead to long term economic value by providing safe, reliable, efficient and high quality services.

D. Domestic Responsible Contractor Program, Preference and Domestic Public Sector Jobs

1. Responsible Contractor Policy and Preference

- a. Staff shall secure written agreement from managers of any investment vehicle, for which the Responsible Contractor Program ("RCP") applies, such that all contractors, investors, managers, consultants or other participants shall adhere to CalPERS' investment policy for the RCP, as amended from time to time by CalPERS, in its sole discretion.
- b. Preference: Staff shall give a strong preference to all domestic infrastructure investment vehicles that have adopted an internal policy regarding responsible contracting

consistent with the CalPERS' RCP subject to CalPERS' fiduciary duty.

- c. This preference shall apply to any domestic infrastructure investment vehicle for which the RCP is not applicable by its terms other than to make a good faith effort to comply with the spirit of the policy. This specifically applies to investments including, but not limited to, commingled funds, opportunity funds, mezzanine debt, and hybrid debt investments.
- d. If the manager of any domestic investment vehicle does not agree to comply with Sections VI (D)(1)(a) or adopt an internal policy regarding responsible contracting, and, if Staff deems it appropriate based on all the circumstances, including the intent of this Policy as well as the investment merits of the investment vehicle, Staff may recommend the potential investment to the Committee and the Committee shall make a determination whether or not to invest in such investment vehicle.
- e. Enforcement: In the event it is determined that during the life of an investment vehicle there is a violation of the above stated terms, Staff shall be precluded from making an investment in a follow on fund with the investment manager. If Staff determines it appropriate, based on all the facts and circumstances, Staff may recommend the investment in the follow on fund to the Committee, which will determine whether to invest in the follow on fund consistent with its fiduciary duty. In addition, in situations where the RCP applies by the terms of this policy, all terms of the RCP including enforcement related terms would apply.

2. Domestic Public Sector Jobs

- a. CalPERS intends, consistent with Section II and with CalPERS' constitutional and statutory duties to act solely in the interest of, and for the purpose of providing benefits to, participants and their beneficiaries and to make sound and prudent investments, not to make investments that will result in job losses to CalPERS' members. If CalPERS' staff determines that it is in the best interest of CalPERS, consistent with CalPERS' fiduciary responsibilities, to consider an investment that would directly impact California public sector jobs, staff will present the investment to the Committee for consideration.

- b. Staff shall secure a written agreement from the managers of any domestic investment vehicle (as described herein) that states, substantially in all material respects, that “in circumstances where the investment vehicle is working with a domestic state, local or municipal agency to establish PPPs or to bid on public offers for the sale, lease or management of public assets, the investment vehicle shall make every good faith effort to recognize the important role and contribution of public employees to the development and operation of such assets. In particular, the investment vehicle shall make every good faith effort to ensure that such [transactions](#) have no more than a [de minimis](#) adverse impact on existing employees. These efforts shall include working directly with public employees, government officials, or collective bargaining groups, as appropriate, in order to take such reasonable actions as may be within the investment vehicle’s control to mitigate such potentially adverse effects. Compliance with this requirement shall be a key consideration by CalPERS when reviewing any future investment opportunities with an investment manager.
- c. Enforcement: In the event it is determined that during the life of an investment vehicle there is a violation of the above stated terms, Staff shall be precluded from making an investment in a follow on fund with the investment manager. If Staff determines it appropriate, based on all the facts and circumstances, Staff may recommend the investment in the follow on fund to the Committee, which will determine whether to invest in the follow on fund consistent with its fiduciary duty. The follow on fund would be required to enter into the written agreement in subsection b above.

E. Management of Partnership Investments

The Program shall be continually refined to obtain the most effective mix of investments. The Program shall invest in traditional partnership investments, and, as appropriate, funds employing other structures.

F. Management of Direct Investments

The Program shall utilize two types of direct investments: [Co-Investments](#) and [Independently Sourced Investments](#). Co-investments and independently sourced investments may be managed through partnerships, separate account structures, or other formation structures, e.g. limited liability companies (LLCs) where the [general partner](#)(s) or fund

manager(s) have expertise in the specified mandates and in related areas material to the success of each investment vehicle or strategy.

1. Co-Investments are direct investments by CalPERS together with an existing general partner or fund manager. CalPERS may invest in the same security as or a different security in the same asset class than the general partner; for example, preferred versus common stock or voting versus non-voting class of shares. The investment may be with a partnership or investment vehicle in which CalPERS has invested or it may be from another partnership or investment vehicle sponsored by the same general partner.
2. Independently Sourced Investments come to CalPERS through contacts other than the general partners with which CalPERS has invested. CalPERS shall avoid competing directly with its general partners in this segment where applicable.
3. Direct investments will be considered after the necessary staff and consultant resources are in place and the Committee approval is obtained.

G. Management of Strategic Investment Vehicles

Strategic investment vehicles shall include innovative structures that provide a cost effective means to access investment opportunities, exploit CalPERS' strengths, and achieve the maximum risk-adjusted rates of return. Strategic investment vehicles may be either partnership or direct investments.

H. Transaction Processes

1. The Program shall process transactions efficiently. To accomplish this, Staff shall serve as the point of contact regarding all transactions flowing through CalPERS. Staff shall direct and coordinate the activities of the Program's External Resource(s). Staff will then be able to monitor and control the process and ensure that due diligence standards are maintained. Additionally, Staff will play a significant role in marketing the Program.
2. For partnerships, the policy goal will be to maintain timely responses to proposals and to process them efficiently and effectively. Partnerships in which CalPERS is already an investor shall be subject to an expedited due diligence process that combines the on-going monitoring assessment with an update of the original due diligence. New partnerships that warrant

consideration shall face a full due diligence review. Section VIII.A contains an outline of the process for evaluating partnerships.

3. Direct investments shall also be addressed in a timely fashion.
4. Strategic investment vehicles shall also be processed in a timely manner. Underlying investments shall be evaluated relative to partnership or direct investment due diligence criteria as appropriate.

I. Quality Control Processes

The Program shall employ a quality control process, which may include both Staff and External Resource(s) to monitor Program efficiency, track investment performance, and manage risk.

1. Monitor Process – Staff monitors transaction processing to insure timely decision making and an effective process.
2. Monitor Portfolio Performance – Actual returns are compared to the Program's performance objectives, and to the expected return for the investment.
3. Monitor Risk Control – Program standards are maintained through the following processes:
 - a. Assess the level of diversification in the portfolio on a continual basis, including the level of diversification across investment style, geographic distribution, industry concentrations, and across other ranges as appropriate.
 - b. Track and monitor due diligence activity and review the External Resource's due diligence. Monitor External Resource's activities and internal policies and procedures.
 - c. Identify problems early and take corrective action quickly.

J. Risk Parameters

1. Financial Risk: Infrastructure investments may employ substantial leverage (borrowing), which may result in significant financial risk.
2. Liquidity Risk: Infrastructure investments may lack liquidity and may have time horizons greater than 10 years. Secondary markets for such investments can be very limited.

3. Credit Risk: Credit markets experience volatility and changes in these markets may have a significant impact on the cost of financing infrastructure investments and overall transaction execution.
4. Political and Public Risk: Infrastructure investments may be associated with political approval and public acceptance of projects.
5. Labor Risk: Risks associated with public sector outsourcing, or labor relations may affect investment opportunities in infrastructure.
6. Regulatory Risk: Changes in regulatory conditions may affect investment returns.
7. Country Risk: Political, economic, and currency risks are associated with investing in all countries.
8. Structural Risk: CalPERS negotiates its agreements to include certain fundamental rights, protections and remedies. These basic protections include [advisory committee](#) participation, specific termination provisions in partnership transactions, anti-dilutions, put and call [options](#), voting rights for material events, and other covenants and governance provisions in the case of direct investments.
9. Valuation Risk: Partnerships shall be evaluated to determine if the general partner employs an appropriate valuation discipline. For direct investments, the Staff shall review valuations to determine if they are reasonable.
10. Market Risk: The infrastructure market continues to develop globally and market opportunities can change depending on many variables such as market supply and demand.
11. Environmental and Climate Risk: Long term investment returns may be impacted by risks and opportunities related to the environment and climate change.
12. Hazardous Materials: Implementation of the Program shall comply at all times with CalPERS' Hazardous Materials policy.

K. Guidelines for Evaluating Proposals

Proposed partnership, direct investment, and strategic investment vehicle opportunities shall be evaluated relative to their fit with the Program Strategy.

Section VIII contains outlines of specific guidelines for partnerships and direct investments, respectively. Strategic investment vehicles shall be evaluated according to the underlying structure of the investment, which may include either partnership or direct investments.

L. Renewable Energy and Sustainability

CalPERS encourages the prudent use of sustainable development methods and operational practices when reasonable and economically feasible. Consideration shall be given to the use of renewable energy technologies, recycled and renewable building materials, air and water conservation technologies and practices, and efficient waste, recycle and disposal technology and practices. Consideration shall also be given to the environmental sustainability of investments including but not limited to energy efficiency, fuel economy, alternative energy generation and distribution impacts.

VII. PERMISSIBLE INVESTMENTS

CalPERS shall consider any appropriate investment opportunity with the potential to meet or exceed the Program's performance objectives. Investments shall generally fall within the categories defined below.

A. Infrastructure Sectors

CalPERS shall consider investment opportunities within, but not limited to, the following infrastructure sectors:

1. Transportation assets (e.g. - bridges, roadways, railways, transit and tunnels);
2. Ports (e.g. - airports, seaports, barges and terminals);
3. Utilities (e.g. - clean energy, pipelines, storage and distribution and power transmission);
4. Water (e.g. – water treatment, distribution, storage, desalination and other water related investment areas);
5. Energy resources (e.g.- hydrocarbons, gas, geothermal, wind-generated, water-generated, and nuclear; transmission; and distribution);
6. Communications (e.g. - broadcast and wireless towers, cable systems and satellite networks);

7. Social Infrastructure (e.g. - educational facilities, healthcare facilities and judicial buildings); and,
8. Other infrastructure investments that are aligned with CalPERS' strategic objectives.

B. Structures and Investment Vehicles

The Program shall be implemented primarily through direct equity investments in infrastructure (either 100% owned or through partnerships, funds, joint ventures or other co-investment vehicles). Equity (privately-held or publicly-traded), leveraged equity, and debt instruments with equity-like features, are also appropriate structures for investments.

CalPERS shall consider a number of different vehicles for investments including, but not limited to, the following:

1. Equity Investments in 100% owned assets;
2. Equity joint-ventures or other co-investment vehicles;
3. Indirect equity investments in commingled funds; private or public corporations; [limited partnerships](#); or other pooled investment vehicles;
4. Private placements of equity or debt in public or private infrastructure operating companies;
5. [Investment grade](#) as well as lower or unrated tranches of pre-existing securitized or lower structured debt instruments, such as mezzanine or other debt with equity-like features;
6. Leveraged equity investments;
7. Listed infrastructure companies, [Exchange Trade Funds](#) (ETF);
8. Futures or swaps on listed infrastructure indices on a fully collateralized basis; and,
9. Restrictions and Prohibitions: A list of prohibited investments is outlined in the Inflation-Linked Asset Class policy in Section V.B.

C. Selection Considerations

In choosing specific investment vehicles for the Program, consideration shall be given, but not limited to the following:

1. Proposed investment strategy;
2. Expected risk and return attributes of vehicles;
3. Potential diversification benefits;
4. Investment time horizon;
5. Potential exit strategies and liquidity;
6. Monitoring costs and feasibility;
7. Tax considerations;
8. Other incremental costs;
9. Fee arrangements;
10. Co-investment by management firm or partner;
11. Potential conflicts of interest;
12. Governance and control;
13. Partners or co-investors; and,
14. Performance track record.

D. Diversification by Geography

The Program shall seek to include investments in a variety of jurisdictions. Investments in both domestic and international markets are permitted with the relative proportion of each type at a given time to be determined based on prevailing market conditions. Regional diversification within a particular country shall also be considered when such diversification contributes measurably to risk mitigation. Section VI.B.3 provides the Regional Allocations for the infrastructure investments.

E. Diversification by Revenue and Strategy

The Infrastructure portfolio shall be diversified so that no one source of revenue is dominant in the portfolio of the Program.

The Senior Investment Officer responsible for the Inflation-Linked Asset Class will review the investments in infrastructure assets and vehicles regularly and identify adjustments when necessary to ensure satisfactory diversification by geography and revenue sources. Adjustments to diversification in the Program shall be implemented on an opportunistic basis over a reasonable time frame (normally within a three-year period), and with ample consideration given to preserving the investment returns to CalPERS. Section VI.B.1 provides the Portfolio Allocation for infrastructure investments.

F. Diversification by Asset Size

The size of portfolio investments shall depend on the opportunities available to CalPERS, with neither small nor large investments being dominant in the Program. Furthermore, investment size shall be appropriate to the projected risk versus return level of the investments. However, in order to have some effect on the infrastructure portfolio and to maximize relationships, a select group of investors may be utilized to invest a significant portion of the infrastructure portfolio.

G. Investment Holding Period and Dispositions

The target holding period for infrastructure assets shall generally be for long-term investment (10 years or more). However, disposition of individual investments may be triggered by an opportunity to capture a return in excess of the targeted return, or by a revised investment strategy resulting from changes in markets for infrastructure assets or changes in CalPERS' financial objectives.

H. Use of Leverage

Leverage is permissible in the Program to enhance investment returns. Infrastructure assets are able to attract and service significant debt levels due to stable inflation-linked cash flows, long term concessions and off-take agreements. The program shall be managed to ensure that leverage is appropriate and that it is accretive to returns considering leverage risk. Staff will consider the debt rating, debt service ratios and stability of cash flow in addition to the debt level (leverage) to determine if debt is excessive. A minimum debt rating of BB by Standard and Poor's, Ba1 by Moody's or equivalent is required on the debt for all investments.

I. Credit Rating

For Program investments in debt securities, a minimum credit rating of BB by Standard and Poor's, Ba1 by Moody's or equivalent is required at the time of investment.

VIII. SPECIFIC CONSIDERATIONS

A. Partnership and Fund Investment Guidelines

1. Minimum Requirements and Investment Styles

- a. The principals of the investment vehicle shall demonstrate relevant experience in or directly applicable to the market in which they propose to work or the strategy they wish to execute.
- b. The proposed strategy and business plan shall be set forth in sufficient detail to permit substantive and meaningful review of the opportunity, verification of the investment concept and risk factors, and assurance that the investment opportunity can be realized and produce the required return.
- c. The risk- and reward trade-off in the particular market that is addressed by a partnership or fund proposal shall be attractive, based on reasonable assumptions.

2. Evaluation Criteria

Primary emphasis will be on the quality and experience of the general partners in a partnership investment. Additional factors may include, but are not limited to, the following as appropriate:

- a. Fit with the Program Strategy and within the Program.
- b. Integrity of the general partner, its employees, other investors and quality of overall partnership or fund governance, management of the partnership or fund, including controls and reporting systems.
- c. Relationship with [limited partners](#).
- d. Potential for co-investments.
- e. Creativity of the general partners to implement a unique strategy that is not competitive with existing investments.
- f. Reasonable ratio of investors to general partners and reasonable ratio of committed capital to general partners.

- g. Appropriateness of terms and conditions and alignment of interests with limited partners.

3. Due Diligence

A due diligence review by Staff and [External Resources](#) selected for reviewing a transaction shall include the following, when applicable:

- a. Review and analysis of all pertinent offering documents including but not limited to offering memorandums, subscription agreements, private placement memorandums and operative investment agreements.
- b. Consideration of potential conflicts of interest, if any, posed by the proposed investment and prior investments and activities of the principals.
- c. Review and analysis of the investment concept, including entry and exit strategies and terms including fees, principal participation, and structure.
- d. Review and analysis of the fit within the Program, including fit with the Strategy, other constraints and guidelines, and compliance with applicable investment policies.
- e. Review of background and reference of principals and review and analysis of track record including performance of prior and current investments.
- f. Investigation of special terms and side letter agreements with past or present investors.
- g. Analysis of the competition between a given proposal and an existing preferential relationship or alternative asset, which may include, but is not limited to, a review of the following: the size of the industry, the segment of the industry, and the deal flow for both the preferential relationship and the proposed investment.
- h. Review of any lawsuits, litigation involving the general partner, its principals, employees and prior funds.

4. Legal Constraints

Legal counsel shall be consulted for advice and interpretation of the many areas of legal concern, including but not limited to:

- a. Tax concerns;
- b. Licensing and registration requirements; and,
- c. Regulatory compliance, that is, partnerships and proposed investments must take all relevant state and federal regulatory requirements into consideration.

5. Other Parameters

- a. Types of allowable investments: Any appropriate investment opportunity which has the potential for attractive risk-adjusted returns which is not otherwise prohibited by CalPERS.
- b. Terms and conditions: Fees, [preferred returns](#), profit splits, and other terms and conditions are negotiated as appropriate and when prudent.
- c. Use of fund's name: Staff and external resource(s) identify any submitted investment opportunity containing as part of its name or title any reference to CalPERS and immediately inform the proposer that inclusion of such a reference or use is inappropriate and unacceptable to CalPERS and require that it be removed.

B. Direct Investment Guidelines

1. Minimum Requirements

- a. Management shall have compiled relevant business and management experience.
- b. The entity in which the investment is made shall be appropriately capitalized in the relevant circumstances.
- c. CalPERS' exposure to direct investments shall be limited to the investment amount through appropriate formation structures (e.g. LLCs, partnerships or separate accounts).

2. Evaluation Criteria

Primary emphasis shall be on the following:

- a. The integrity of the general partner, its employees, and other investors.
- b. The historical and prospective financial condition of the company including its market position, relative competitive position within the industry and capital structure.
- c. The growth prospects of the company and its industry in light of existing and anticipated economic conditions.
- d. The underlying stability of the company's business, earnings, financial and operating controls, reporting mechanisms and the quality of the corporate governance.
- e. The quality of the company's assets, such as manufacturing facilities, inventories, receivables, and other assets, including intangibles, essential to the company's operations.
- f. The quality, stability and experience of the management team, the Board of Directors, and other investors, including the quality of their interaction.
- g. The return potential of the investment, given its terms and conditions, compared to the perceived risks and the relative return/risk profile of comparable investments.

3. Additional Considerations

At a minimum, additional factors shall include the following:

- a. The specific objectives and goals of the company and its management team including the strategy to be employed to achieve the aforementioned objectives and goals. Management and investors should have a well thought-out plan for creating and realizing value from the company.
- b. The controlling shareowner(s) and other institutional investors.
- c. The relationship with the management team, the Board of Directors, other investors and any controlling shareowners.
- d. The potential for future follow-on investment opportunities.

4. Due Diligence

For co-investments, Staff, and External Resources if utilized, will rely heavily on the work of the general partner sponsoring the transactions while conducting its own due diligence. Independently sourced investments will require a much more in-depth due diligence review because these investments do not come to CalPERS through one of the existing general partners in the portfolio.

A due diligence review by Staff and the External Resources if selected for reviewing a transaction shall include the following, when applicable:

- a. Review of whether the proposed investment falls within the Strategy, constraints and guidelines, and if it complies with applicable investment policies.
- b. Review and analysis of all pertinent documents, including offering memorandums, research reports, annual and quarterly reports, SEC reports, proxy statements and news articles regarding the company, management and industry.
- c. Performance of background checks of the senior management team and any controlling shareowners.
- d. Review of the company's historical and projected financial operating results, market position, and present financial condition, including examination of auditor reports and possible interview of the auditor.
- e. Review and analysis of any contingent liabilities, including potential liabilities related to anticipated legal action, environmental issues, under-funded pensions, taxes and insurance issues.
- f. Review and analysis of ownership structure, employee benefit plans, anti-takeover provisions, labor contracts, and as appropriate, consultation with relevant labor representatives.
- g. Performance of third party reference checks with key suppliers, customers and, when advisable, competitors.
- h. Review of the company's instruments of indebtedness, corporate instruments, board minutes and any special

agreements between the company and other major investors.

- i. Review and analysis by counsel of all relevant state and federal regulations and regulatory reports, examinations and ratings regarding the company and its business sector.
- j. Conduct visits to the company's principal facilities and corporate headquarters and interviews with board members, senior management and controlling shareowners.

5. Legal Constraints

Legal counsel shall be consulted for advice and interpretation of the many areas of legal concern, including but not limited to:

- a. Tax concerns;
- b. Licensing and registration requirements; and,
- c. Regulatory compliance, that is, partnerships and proposed investments must take all relevant state and federal regulatory requirements into consideration.

6. Other Parameters

- a. Method of Participation: CalPERS generally participates as a preferred or common stockholder or as a senior or subordinated debt investor with common stock participation.
- b. Types of Allowable Investments: Any appropriate investment opportunity which has the potential for attractive risk-adjusted returns and which is not otherwise prohibited by CalPERS.
- c. Terms and conditions: Fees, preferred returns, profit splits and other terms and conditions are negotiated as appropriate and when possible.
- d. Use of CalPERS name: Staff and external resource(s) identify any submitted investment opportunity containing as part of its name or title any reference to CalPERS and immediately inform the proposer that inclusion of such a reference or use is inappropriate and unacceptable to CalPERS and require that it be removed.

e. Corporate Governance

Consistent with CalPERS' policies on Corporate Governance,

- (1) Voting: CalPERS shall maintain full voting rights with respect to any class of securities in which it might invest. Where applicable, CalPERS shall execute all proxies and voting instructions in a manner consistent with CalPERS' Statement of Investment Policy for Global Proxy Voting. When appropriate, CalPERS may wish to participate as part of a voting trust agreement under which a third party (e.g., a lead investor) retains its proxy to vote CalPERS interests.
- (2) Board of Directors Representation: CalPERS shall consider seeking representation on the board of directors of a corporation in which it invests, in a manner consistent with CalPERS' Statement of Investment Policy for Representation on Corporate Boards of Directors. CalPERS may wish to retain the right to have an independent representative or representatives of CalPERS appointed to a portfolio company's Board of Directors. Furthermore, the fund should allow for the possibility to retain the right to have such representatives participate in select committees of such Board of Directors (e.g., Audit Committee, Executive Committee or Compensation Committee).
- (3) Board of Directors Accessibility: CalPERS should strive to obtain the right to attend, as an observer, a portfolio company's Board of Directors meeting. Directors should be accountable to CalPERS as a shareowner. To ensure this accountability, directors must be accessible to CalPERS' inquiries concerning key decisions affecting the company's strategic direction.
- (4) Board of Directors Composition: Board Composition should follow corporate governance best practices consistent with CalPERS' Global Principles of Accountable Corporate Governance. CalPERS should strive to obtain agreements as to the composition of a Board of Directors, including

guidelines on the number of outside Directors and the composition of key committees.

- (5) Special Voting Rights: With the exception of Global Equity portfolio companies, CalPERS should, if desirable, strive to obtain special class voting rights with respect to specific corporate governance matters such as proposals deemed contrary to CalPERS' interests, for example, as in the case of hostile takeovers.

IX. CALCULATIONS AND COMPUTATIONS

A. Reporting

1. Staff shall require periodic reports from investment partners to facilitate monitoring that are appropriate for the specific transaction.
2. Staff shall monitor individual partnerships, direct investments and the portfolio as a whole. Monitoring includes diversification across alternative investment types and programs to assure an appropriate mix.
3. Performance Reporting
 - a. Partnership Investments
 - (1) Objectives established by the partnership or the principals managing the investment (actual financial performance as compared to original plan);
 - (2) Risk undertaken;
 - (3) Performance of other similar investments;
 - (4) The short-term monitoring benchmark for partnerships in the first four years of their term; and,
 - (5) The long-term performance objective, with appropriate interpretation if applied to the short-term.
 - b. Direct Investments

CalPERS shall assess the performance of direct investments relative to the following areas:

- (1) Actual financial performance of a company compared to the business plan and strategy;
- (2) Risk undertaken; and,
- (3) The performance of the company against its pro forma operating results, its industry and the total Program portfolio.

c. Strategic Investment Vehicles

CalPERS shall assess the performance of strategic investment vehicles according to original plan and partnership and direct investment criteria as appropriate.

4. Committee Reports

Quarterly and annual reports shall be provided to the Committee. These reports shall include reviews of investments and their performance.

Approved by the Policy Subcommittee:	June 16, 2008
Adopted by the Investment Committee:	August 18, 2008

FORESTLAND PROGRAM

February 19, 2008

I. PURPOSE

This attachment to the Inflation-Linked Asset Class Policy sets forth the investment policy ("Policy") for the Forestland Program ("Program").

II. STRATEGIC OBJECTIVE

The Forestland Program shall be managed to accomplish the following:

- A. Preserve investment capital.
- B. Generate attractive risk-adjusted rates of return for CalPERS as a total return investor, including the following components:
 - 1. Provide, at a minimum, moderate to low cash flow from operations with the generation of cash flow secondary to producing long term total returns ; and
 - 2. Provide appreciation potential as a result of biological growth and employing active best management techniques and practices.
- C. Provide a hedge against inflation.

III. RESPONSIBILITIES

Responsibilities are described in the Inflation-Linked Asset Class policy, section III.

IV. PERFORMANCE OBJECTIVES

The Portfolio shall be managed to achieve the following long-term objectives, net of fees.

- A. Exceeding a minimum target real rate of return of 5% after fees (inflation plus a premium of 5%, inflation measured by the United States Bureau of Labor Statistics Consumer Price Index for All Urban Consumers -CPI-U).
- B. Achieving real rates of return from individual assets held in the Portfolio that exceed a target rate that is adjusted for risk depending on the nature of the investment and the country and

region in which it is located with the overall target stated in paragraph A above as the benchmark.

V. INVESTMENT APPROACHES AND PARAMETERS

A. [Sustainability](#) Considerations

Maximizing the economic benefits to CalPERS is the primary objective of the Portfolio. The management of each investment shall incorporate sound principles for environmental management and social responsibility with full consideration of impacts on [biodiversity](#), water and air quality, soil conservation and local communities especially indigenous groups. Respecting the desire to maintain and enhance environmental quality and the social and economic benefits accruing to local communities, CalPERS shall strive to use the best and highest forest management standards commercially and economically feasible while meeting or exceeding the performance objective. To this end, investment opportunities involving forests that have achieved independent environmental or [forest certification](#) will be sought. For assets not yet certified to such a standard, proponents and managers of the properties will be encouraged to seek certification and commit to a fixed time table for its realization. In such cases, due diligence procedures will include benchmarking management practices against an international or national standard for forest management appropriate for the region in which the asset is located.

B. Non-conventional Forestland Investments

Investments in [emerging product markets](#) for forestlands involving non-traditional sources of revenue such as [carbon sequestration](#) and the production of feed stock for bio-fuels from both woody (e.g. traditional timber species, bamboo) and non-woody (e.g. switchgrass) vegetation are permitted. These investments will be subjected to the same performance requirements as traditional forestland investments and will be scrutinized rigorously prior to committing funds and monitored closely to ensure acceptable performance.

C. Investment Objectives and Criteria

Implementation of this Program shall comply at all times with the applicable CalPERS investment policies including, but not limited to, the Hazardous Materials in Real Estate Investments policy.

1. Investment quality

- a. Forestland tracts shall be comparable in quality to those held by other institutional investors or the forest products industry to enhance an exit strategy. The following parameters shall be used as a guide when relevant to assess comparability to investment grade forestland assets for possible inclusion in the Portfolio:
1. **Soils** – soil structure and fertility should be as good or better on average than comparable industrial tracts.
 2. **Rainfall** – the annual average and distribution of rainfall should be similar to that for observed on nearby industrial tracts.
 3. **Stocking** – the forest should be fully stocked with vigorous healthy trees and species that are matched to the sites with no backlog of unplanted land.
 4. **Genetic stock** – for plantations, the provenance of the planted trees should be appropriate for the sites and have shown good growth and form characteristics.
 5. **Silvicultural practices** – the silvicultural prescriptions applied by the current owner and proposed by the candidate investment manager/property manager should be proven as appropriate for the species, sites, and target markets. There should be verifiable evidence that the prescriptions have been implemented as planned.
 6. **Fire threat/protection** – the threat of fire should be low and proven protection capacity should exist for the asset and neighboring lands.
 7. **Biotic risks** – there should be little or no evidence or history of problems with insect, or fungal, pathogens or harmful animals.
 8. **Abiotic risks** – there should be little or no evidence or history of problems from wind

throw, flooding, snow press, and other abiotic risks.

9. **Diverse competitive markets** – the forest should be located in proximity (economically viable) to diverse and competitive markets for the full range of products expected to be generated by the forest.
10. **Well developed transportation network** – the private and public transportation network (roads, rail, and waterways) should be well developed and well maintained as warranted.
11. **Labor** – there should be no evidence of labor shortages or labor disruptions for manufacturing phases relevant to the investment.
12. **Tenure** – the property should have secure, defensible legal title with no evidence of outstanding land claims, whether the intention is to buy the land or use some other form of contractual arrangement (lease, joint venture, and license).
13. **Liabilities** – there should be no outstanding material regulatory (environmental, silvicultural, protected areas, taxation, other) liabilities associated with the property.

2. Diversification

The Portfolio shall be appropriately diversified to reduce risk. The Portfolio shall be managed to maintain a degree of diversification with regard to geography, forest cover and revenue sources including emerging product markets.

a. Diversification by Geography

The Portfolio shall include investments in a variety of jurisdictions. Investments in both domestic and international markets are permitted with the relative proportion of each type at a given time to be determined based on prevailing market conditions. Regional diversification within a particular country

shall also be considered when such diversification contributes measurably to risk mitigation.

b. Diversification by Forest Cover

The Portfolio shall include assets that are diversified with respect to forest cover including a variety of species in both the softwood and hardwood species groups. Diversification can also be enhanced by investments in non-traditional woody and non-woody species. Diversification by forest cover shall be consistent with the Portfolio requirements for financial performance and risk mitigation.

c. Diversification by Revenue Source

The Portfolio shall be diversified so that no one source of revenue ([bio-fuel](#), carbon sequestration, pulpwood, sawtimber, specialty hardwood, non-timber) dominates the Portfolio.

The Asset Allocation Unit will review the investments in forestland assets regularly and order adjustments when necessary to ensure satisfactory diversification by geography, forest cover and revenue sources. Adjustments to diversification in the Portfolio shall be implemented on an opportunistic basis over a reasonable time frame (normally within a three-year period), and with ample consideration given to preserving the investment returns to CalPERS.

3. Investment Asset Size

Investments in the Portfolio shall have a range of sizes to both enhance liquidity of the Portfolio and enable participation in larger opportunities while maintaining significant control over management. An individual investment shall be one or more parcels of forestland with unity of title, use, and contiguity. Non-contiguous parcels of land may be considered an individual investment if there is unity of operation.

4. Investment Holding Period/Dispositions

The target holding period for forestland assets shall generally be for long-term investment (10 years or more).

However, disposition of individual investments may be triggered by an opportunity to capture a return in excess of the targeted return, or by a revised investment strategy resulting from changes in markets for forest products or changes in CalPERS' financial objectives.

5. Leverage

The Program normal loan-to-value ratio is limited to 40%. The loan-to-value ratio limit may be extended to 50% for up to three years with [Chief Investment Officer](#) approval and up to one year with Asset Allocation Senior Investment Officer approval in order to permit a gradual decline in debt on acquisitions and to maintain a flexible and optimal harvesting scheduled. Staff will report quarterly to the Committee on the loan-to-value ratio any time that the leverage exceeds 40%. In any use of leverage, the debt service payments should not drive harvesting activities.

6. Investment Manager and Property Management

- a. The investment manager shall be responsible for developing operating management plans, strategic plans and budgets, and on-site supervision of each forestland holding. Individual assets must be physically inspected at least once a year. Emphasis shall be placed on active management to capitalize on opportunities that add value.
- b. On-site property management shall be conducted, under the supervision of the investment manager, by firms with an established presence in the local forestland markets and demonstrated expertise in optimizing forestland property performance.
- c. Management shall comply with all laws and regulations applicable to the jurisdictions where the forestland assets are located.
- d. Where prudent and economically practical, revenue sources from non-timber resources such as hunting, fishing, gathering, and recreation shall be permitted. A full investigation of the legal liabilities associated with both destructive and non-destructive use of non-timber forest resources, whether for fees or not, shall be completed prior to permitting such use.

7. Contractual Arrangements

Equity ownership of forestland assets is the preferred method of investment. However, other contractual arrangements such as long-term lease, joint venture, and [forest licenses](#) are permitted. All types of contractual arrangements shall include exclusive ownership or use rights for the land, timber and non-timber resources, water, sequestered carbon, and minerals whenever possible.

8. Prohibited Investments

The purchase of land for the primary purpose of commercial land development and speculation shall be prohibited. Investments that involve forced labor, the illegal or harmful use of child labor, violation of community or indigenous peoples' legal or [usufruct rights](#), or violation of laws or regulations pertaining to threatened or endangered species are prohibited.

D. Asset Allocation

The asset allocation range for the Forestland Asset Portfolio is given in the CalPERS Statement of Investment Policy for Equity Real Estate. Upon adoption of a Statement of Investment Policy for the Inflation-linked Asset Class, asset allocation for the Forestland Asset Portfolio will be governed by the Inflation-linked Asset Class policy.

From time to time, the actual allocation may fall out of the ranges prescribed by the Policy. In these instances, adjustments to correct the actual percentage in order for it to comply with the Policy allocation range shall be implemented on an opportunistic basis over a reasonable time frame (within a three-year period with CIO approval and otherwise within one year), and with full consideration given to preserving the investment returns to CalPERS. Staff will report quarterly to the Committee any time that the actual forestland investments are outside the allocation range.

E. Risk Management

The Portfolio will employ strict risk management procedures during the pre-investment due diligence, investment monitoring, and exit due diligence stages of investments. The purpose of these risk management exercises is to identify the full range of risks to the

investment, rank the risks according to potential impact on the investment and then rigorously test the proponent's projections and responses to questioning relating to the identified risks to ensure their logic and analyses are sound.

Due diligence prior to committing funds shall involve a rigorous review and confirmation of the financial, legal and operational aspects of the proposed investment. Qualified, experienced and independent advisors shall be engaged to perform the required reviews and verifications of proponent information and projections. The experience of a chosen advisor shall be appropriate for the type of production systems (e.g. timber, carbon sequestration) that contribute to revenue generation from the forest.

Investment monitoring programs shall be established for each Forestland Asset specifying the scope, frequency and degree of rigor for the periodic reviews. For investments dependent on emerging product markets, monitoring shall be more frequent and more rigorous than with traditional forestland investments.

Due diligence at the exit stage of the investment shall involve a rigorous review and confirmation of the financial aspects of the proposed sale.

VI. VALUATIONS

All calculations and computations shall be on a fair market value basis unless otherwise noted. Market value, as defined by the Uniform Standards of Professional Appraisal Practice (USPAP) of the Appraisal Foundation, shall be incorporated when reporting fair market value for accounting purposes. The standards of the forest industry in appraising forestlands shall be followed where there are differences between USPAP and forest industry practices.

VII. GLOSSARY OF TERMS

Key words used in the policy are defined in CalPERS' Master Glossary of Terms.

Timber Real Estate

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Name change to Forestland Program

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